

QCD Agenda 11/1/02

1. News/Announcements Jay/Joey

Run 2

2. Update on Photon Analyses Ray Culbertson 15'

3. Review of Trigger Review Jay Dittmann 15'

4. Status of Jet Corrections Anwar Bhatti 15'

5. Jet Production at HERA: any lessons for Tevatron?
Mario Martinez-Perez 25'

6. WW Monte Carlo studies Susana Cabrera 15'

Run 1 Preblessing

7. NLO 3-Jet Cross Section Igor Gorelov 30'

Papers of the Week

[hep-ph/0210408](#); Diffractive Higgs and prompt photons at hadron colliders; R. Enberg, G. Ingelman, N. Timneanu Models for soft color interactions have been successful in describing and predicting diffractive hard scattering processes in ep collisions at DESY HERA and ppbar at the Fermilab Tevatron. Here we present new comparisons of the model to recent diffractive dijet data, also showing good agreement. The topical issue of diffractive Higgs production at the Tevatron and LHC hadron colliders is further investigated. For $H \rightarrow \gamma\gamma$ the irreducible background of prompt photon pairs from $q\bar{q} \rightarrow \gamma\gamma$ and $g\bar{g} \rightarrow \gamma\gamma$ is always dominating, implying that higher branching ratio decay modes of the Higgs have to be used. However, such prompt photons can be used to test the basic prediction for Higgs production since $g\bar{g} \rightarrow \gamma\gamma$ involves a quark loop diagram similar to $g\bar{g} \rightarrow H$.

Papers of the Week

[hep-ph/0210404](#); JetWeb: A WWW Interface and Database for Monte Carlo Tuning and Validation; J. M. Butterworth, S. Butterworth

A World Wide Web interface to a Monte Carlo validation and tuning facility is described. The aim of the package is to allow rapid and reproducible comparisons to be made between detailed measurements at high-energy physics colliders and general physics simulation packages. The package includes a relational database, a Java servlet query and display facility, and clean interfaces to simulation packages and their parameters.

[hep-ph/0210380](#); Associated Higgs production with heavy quark pairs at hadron colliders; Stefan Dittmaier; The reactions $p\bar{p}/pp \rightarrow t\bar{t}H+X$ represent important channels in the search for the Standard Model Higgs boson at the Tevatron and the LHC. In the leading perturbative order the cross sections suffer from severe (renormalization and factorization) scale uncertainties. The next-to-leading order QCD corrections stabilize the cross sections considerably. The calculation of these corrections is briefly reviewed, and a few numerical results are discussed.

Papers of the Week

[hep-ph/0210294](#); Event Generators-New Developments; S. Gieseke; talk at Karlsruhe; discussion of new developments in Herwig++. Herwig++ will have option for multi-scale showering, useful for example for production of off-shell particles like top;

Announcements

- Next ME/MC meeting on Friday Nov. 15 10 AM in One-West; there will be a shortened qcd meeting prior to the workshop
 - **talks on ALPGEN tools, ME/MC tuning, JetWeb, color flow algorithms, ttbar-gluon**
 - **Michelangelo will be here for the workshop; currently there are some tenuous plans to discuss b fragmentation and B cross section calculations with him, perhaps at the b or at the qcd meeting that week**
- Proposed QCD Moriond talks
 - **jet production: cross section, shapes, fragmentation, energy flow**
 - **diphoton cross section**
 - **diffraction (1 talk)**
- TDWG meeting is moving from Tuesdays to Friday morning (10:30-11:30 AM) in the Pump Room (so half hour overlap with us (sometimes))
- Please let Jay and I know of any remaining Run 1 analyses without godparents
 - **NLO 3 jet**
 - **W->jet jet**
 - **Λ polarization**
 - **K_0/Λ in min bias**
- Winter conference baseline lepton cuts (see http://www-cdf.fnal.gov/internal/physics/ewk/hipt_lepton_baseline_cuts.html)

Jet Subgroup?

- There are a number of jet-related QCD analyses either underway or soon-to-be underway
 - inclusive jet cross section
 - dijet mass/angular distribution
 - b jet fragmentation/ b jet cross section
 - energy flow/jet shapes
 - k_T jet cross section
- Jay and I have been discussing the possibility/need of forming a specific jet subgroup as a forum for the people involved in the above analyses to work together/have more time for discussion than is available in either the qcd meeting itself or in the jet corrections meeting
- Most of work taking place now is at the level of jet corrections (cross-group effort, see list), but there has to be a specific focus on jet physics to prepare at least some of the above topics for the Winter conferences
- Of course, there will still be a great deal of discussion at the qcd meetings